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The Impact of the Four-day School Week on Travel among Households with Children in Minnesota

By Elton Mykerezi and Arthur Nash

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Abstract

Between 2008 and 2012, thirteen Minnesota school districts switched from the traditional five-day school week to a four-day week, giving students one additional day off each week. This study examined the impact that the adoption of a four-day school week has had on the travel patterns of households with children in Minnesota.

The study found that the four-day school schedule caused statistically significant, sizable increases in "day trips" -- trips that are at least 50 miles away from home but require no overnight stay. The number and nature of "weekend trips" remained unaffected by the four-day week. The study found that households in four and five-day districts took the same number of trips, with a similar number of travelers, had similar lengths of stay and spent similar amounts of money on weekend trips.

The increase in day trips may, however, have come at the cost of longer vacation travel -- trips of five days or longer. The study found a significantly smaller number of longer trips reported by parents in four-day districts than by similar parents in five-day districts. Approximately one in three families took one less long trip over a two year period, due to the four-day week (a 27 percent change from the number of trips taken by the average family in this sample). This resulted in a similar percent drop in nights spent in hotels (nearly 1.5 nights for a 28 percent decline) and overall expenditures ($675 for a 29 percent decline).

The long trips that four-day households skipped were disproportionally in-state. Four-day week families were nine percentage points less likely to take an in-state trip (a 40 percent drop from the average share of in state trips in the sample). Among households that traveled at least once, one in five took one fewer trip in-state (a 49 percent change from the sample average). This implied an 11 percentage point (or 61 percent from the sample average) decline in the probability of having used a MN hotel over a two year period.

1. INTRODUCTION

Between 2008 and 2011, ten Minnesota school districts switched from the traditional five-day school week to a four-day school week in an attempt to reduce district expenditures. Under the new schedule, students attend school for a few more hours four days each week and get one additional day off. This study examined the impact of the adoption of four-day school weeks on travel patterns of households with children in affected Minnesota school districts.

The four-day school week has long been used as a way for school districts nationwide to save on energy and operating expenses. The modified schedule was used as early as 1936 and it was widely implemented in the 1970s (Hewitt and Denny, 2010). During the 2008-2011 recession the four-day school week saw a significant re-emergence. As of 2008, the four-day school week was being used in more than 120 school districts across the U.S., including districts in New Hampshire, Colorado, New Mexico, Arizona, California, Idaho, Kansas, Kentucky, Louisiana, Michigan, Montana, New Mexico, Oregon, South Dakota, Texas, Utah, Wisconsin and Wyoming. Four other states, including New York, Iowa, Ohio and Pennsylvania, considered such a shift in 2008 and states such as Arkansas, Delaware, Virginia and Minnesota authorized a four-day week and were accepting applications from school districts (Donis-Keller and Silvernail, 2009).

In Minnesota the MACCRAY district (a consolidated school district that includes the communities of Maynard, Clara City and Raymond) was the first to adopt a four-day week during the 2008-2009 school year. Three more Minnesota districts adopted the schedule at the start of the 2009-2010 academic year, and there have been additions every year thereafter. The number of districts operating a four-day school week was at thirteen in 2012, and several more were considering a possible switch for the 2012-13 academic year (communication with Minnesota Department of Education (MDE)). Geographically, school districts with four-day weeks in Minnesota as of the 2010-11 school year appeared to be evenly distributed statewide, with no particular pattern of concentration (Figure 1).

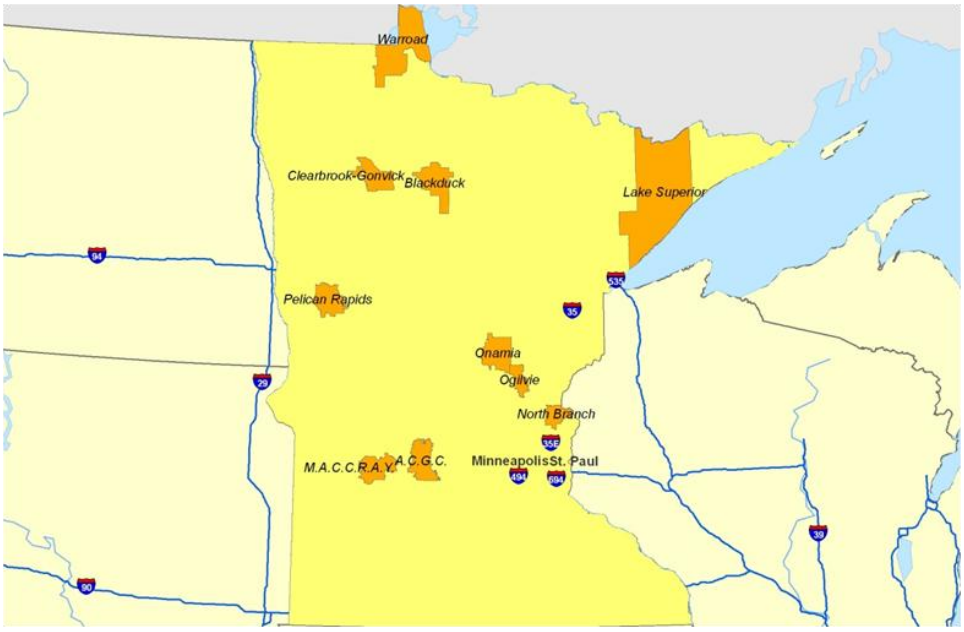

FIGURE 1: Location of Four Day School Districts as of Spring 2010

Interviews with MDE officials, superintendents, principals and school business managers of the four districts using four-day weeks in spring 2010 revealed that the main reason for changing was to reduce district busing, staff and energy costs (Nash, 2010). When interviewed, several school officials expressed beliefs that the new schedule, in addition to easing school budgets, has had some additional positive effects on the community such as more family time, higher participation in extracurricular activities and less stress for students (Nash, 2010).

A systematic review of the literature on four-day school week experiences nationwide found that the effects of the four-day school week remain under-examined. Studies thus far have focused on four areas: finance, student achievement, other student and teacher outcomes, and stakeholder satisfaction (Donis-Keller and Silvernail, 2009). The evidence seems to point to some cost savings in four-day school districts (e.g. Dam, 2006), no significant gains or losses in standardized test scores (e.g. Hewitt and Denny, 2010), and reports of increased attendance among students and teachers, reduced disciplinary referrals and even increased graduation rates (Donis-Keller and Silvernail). Multiple stakeholder satisfaction surveys have found a strong degree of support for the four-day school week among teachers and parents in such districts (Donis-Keller and Silvernail).

In Minnesota, the number of four-day districts has grown statewide since 2008, and the new schedule appears to have been received well by school officials and parents. This may indicate that four-day school weeks could be a lasting, state-wide phenomenon rather than a set of isolated occurrences.

This was the first study to examine the impact of the four-day school week on parental travel patterns. The four-day week increases the time children spend in school by 1.5 to 3 hours over four week days, but adds an extra day to each weekend. Such a substantial change in time requirements for children could be expected to have implications for Minnesota's tourism industry. For example, it is reasonable to expect that parents would find it appealing to plan day-long activities with children during the extra day off rather than make arrangements for day care; that extended weekend trips would be more desirable; and that children would come along on trips more frequently than before.

There may, however, be a substitution effect. Increased activity on short trips and/or day trips over the year may compete for budgets and time with longer family vacations. This possible shift from longer to shorter trips may have a positive or negative overall effect on the State's tourism industry, depending on the relative expenditures and destinations of each trip.

The purpose of this study was to isolate the effects of the four-day school week on:

1. the number of day trips (defined as trips that are 50 miles or further from home but do not require overnight stay);
2. the number and nature of short leisure trips that require an overnight stay (one to four nights); and,
3. effects on long trips or vacations (defined as trips lasting five days or longer).

For trips requiring an overnight stay, the analysis included possible impacts on how many household members go on each trip, length of stay in days, number of times the travelers paid for accommodation, overall travel expenditures and whether the destination was in state.

2. EMPIRICAL STRATEGY

2.1 Data Collection

Information on household travel patterns was collected in a questionnaire sent to parents in four four-day school districts and three school districts with traditional five-day weeks. The questionnaire was designed to collect information on recent travel patterns and changes in travel patterns over the last few years. The questionnaire also elicited a number of household attributes including household size, composition, household member education and employment.

A pilot questionnaire was tested in August 2011 with a small number of parents. The questionnaire was then reviewed by state leaders knowledgeable of the Tourism Industry in Minnesota. The finalized version was delivered to parents between November 2011 and January 2012.

2.2 Questionnaire

The questionnaire focused on three different kinds of trips to capture overall travel patterns: long trips, weekend trips and day trips. The first section asked respondents to share information about their long trips. Parents reported the frequency of long trips (of five days or longer) in the past two years. The questionnaire then asked about travel destination, method of transportation, accommodation, duration of the trip, number of household members traveling, overall expense as well as the approximate date of each trip, for as many trips as the respondents could recall.

The next question in section 1, regarding long vacations, asked parents to report if the number of long trips taken over the most recent year was different from that of a few years ago. This allowed for an examination of *changes* in reported travel frequency for those in four-day districts relative to households in five-day districts.

Finally, those who reported a change in the number of long trips (positive or negative) rated the importance of factors that caused the change in long trips on a 1-5 Likert scale (ranging from 1="very unimportant" to 5="very important"). "Changes in kid's school schedule" was one of the items rated, along with changes in "kid's sports schedules", "the work schedules of household adults", "travel preferences", "other family circumstances" and "financial circumstances". This information allowed us to examine whether parents in four-day school districts were more likely to identify a school schedule change as an important factor for changes in long trips than were parents in five day districts.

Similar to the long trip section, the second questionnaire section collected the same information (travel frequency, dates of travel, transportation, accommodation, length of stay, number of people on each trip, destination and overall expenditures) about "short/weekend trips". These are defined as trips that require at least one night of stay away from home but are no longer than four-days; the intention was to capture experiences during weekend or extended weekend travels.

The third section elicited information on the frequency of "day trips." These are defined as trips that require at least 50 miles of travel from home and take up a substantial part of a day, but do not require overnight stays away from home. Detailed information on each of these trips was not elicited, because respondents would face substantial recall issues that would make the survey more difficult to complete.[1] Using the same format as in sections one and two, parents reported whether the

[1] Information on date, destination, duration, transportation, attendance and expenditures were not elicited for each day trip over the last twelve months. Survey pilot testing revealed substantial respondent difficulties in recalling a significant number of day trips. Travels not requiring stay away from home showed to be more difficult to recall and

frequency of day trips over the last twelve months was different than several years ago and rated reasons for change on a five-point scale of importance.

The remainder of the questionnaire collected information about, household demographics, economic circumstances, work status, changes in wellbeing and changes in hours worked by household adults relative to a few years ago. This was done to assure that demographic and lifestyle conditions among respondents were similar among households being compared.

2.3 Sampling

School and district administrators in seven districts collaborated to distribute the questionnaire to parents. Approximately 300 surveys were distributed to parents in parent-teacher meetings and another 2,800 were sent to parents through the school system via their children. From those surveys provided directly to parents, a total of 97 were completed and returned, a response rate of nearly 30%; 194 of the 2800 sent through students were returned for a response rate of just 7%. The most likely explanation for different response rates is that surveys in the children's' back packs had a smaller chance of being noticed by parents than those handed directly to parents during teacher-parent conferences. No statistical differences in responses between distribution channels were found.

2.4 Causal Interpretation of Results

This study used observational (non-experimental) data to assess the impact of the four-day school week on parental travel. Estimating the *causal* impact of policies on behavior with observational data is inherently difficult.

The ideal experiment for estimating the true *causal* effect of a four-day school week on travel would require data on household travels each year over many years (a true panel), so that changes in travel patterns before-to-after the policy could be traced. Additionally, the ideal experiment would randomly assign communities into a four-day school week ("treatment group") and a five-day week ("control group"). Random assignment would assure that those in each group were statistically identical so that there would be no (*observed* or *unobserved*) differences between the "treatment" and "control" groups. The effect would then be measured by comparing the pre-to-post *change* in travel patterns for parents whose district was randomly assigned to the four-day week (the "treatment" group) to the *change* in travels of those whose district was assigned to remain a five-day district (the "control" group) over the same time span.

Of course, this study did not have access to a panel dataset and could not create a random assignment of communities into school schedules. However, three steps in the study design were undertaken to mimic the "ideal experimental set-up" as closely as possible.

First, the study used *observable* household characteristics to control for external factors that might be the cause of travel choices. However, even if *observed* family attributes are held constant, the results are still partial associations that must be interpreted with caution. For instance, if these partial associations indicated that families in four-day school districts take more day trips, on average, than five-day district families of similar size, composition and economic circumstances, this would not automatically imply that the four-day school week *caused* an increase in day trips. There may be other *unobserved* factors associated with the adoption of a four-day school week in a community and that community's travel patterns. For example, a four-day school week may be more

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asking for a list of such trips and details on each would have made the survey more difficult to complete, and would have generated information with substantial measurement error.

likely to gather parent and school board support in communities where parents have a higher preference for short family trips. If this were the case, this latent preference for short trips could explain both facts; that parents in four-day districts report more day trips and the fact that their district was able to switch to a four-day school week in the first place. So a cross-sectional view of how short trips differ between parents in four and five-day districts would over-estimate the effect of the four-day school week in the presence of ***unobserved*** differences in the characteristics of four-day and five-day parents. While the study elicited and held constant many household characteristics, it is unrealistic to presume that we were able to hypothesize all possible factors that were different between four and five-day households and formulated the appropriate survey instruments to capture every one of these factors. Therefore, if *unobserved* family characteristics that are systematically different in four and five-day districts *and* that are correlated with travel patterns exist, cross-sectional statistical models that only hold *observed* family attributes constant produce biased results.

A second step was taken to minimize the possibility that such unobserved confounders exist. The study heavily oversampled parents in school districts that were very strongly considering switching to a four-day school week. We drew from such districts as, New Ulm, for example, where a vote on this issue was scheduled. This provided a better comparison group than drawing from districts that never considered a switch. Unobserved differences between the "treatment group" (parents in the four-day districts) and the "control group" (parents in five-day districts) could still exist. However, parents in districts that were likely to adopt the shorter school week soon were less likely to have unobservable differences from four-day district parents than would families in districts that haven't considered the policy.

The third measure taken to mimic "the ideal experiment" was to elicit information on how the number of trips taken in the last twelve months (day trips, short trips or long) had changed relative to "a few years ago". (e.g. question 3 in the questionnaire; Appendix 1). The number of "years ago" in each survey was chosen strategically. For parents in four-day school districts, the year that "the few years ago" referred to was chosen to coincide with the last year before the four-day school week began. For example, parents in districts that adopted in the 2010-11 school year were asked if they traveled more "this year" relative to "last year". Those in districts that adopted a four-day week in 2009-10 were asked if their travels over the last twelve months were more or less frequent than two years ago, and so on. Parents in five-day districts were also asked to compare travels during the last twelve months with those from one, two or three years ago. The reference period was randomly varied among five-day surveys to make sure that suitable "controls" for each four-day family could be found, regardless of adoption year. *Changes* in the travel frequency of parents whose districts switched to a four-day school week sometime during the lag period could then be compared to *changes* in the travel frequency of similar parents whose districts remained on a five-day schedule over the same time span.[2]

If parents were able to recall past travels with the same accuracy that they can recall recent travels, this survey would closely resemble a true panel dataset. Unfortunately, recall is less than perfect, leading to perhaps more measurement error on retrospective questions than one would find on contemporaneous questions. Measurement error due to imperfect recall can increase the standard deviation of regression estimates in the study, making it more difficult to get "statistically significant" results. Still, this would not cause bias unless parents in four and five-day districts made

[2] This step eliminates possible confounding effects of unobserved family characteristics that remain constant over time. For example, if parents in four-day districts have a higher tendency to be adventurous, but this tendency changes little with time, then comparing the number of trips in four and five-day districts would be biased, but comparing the *change* in the number of trips would not.

systematically different kinds of mistakes when they filled out surveys. There is little reason to expect that errors made due to imperfect recall would be systematically different between four and five day parents. Thus, the fact that information about past travels was elicited via retrospective questions likely does not bias the analysis. Random "imperfect recall" may increase measurement error and, as a result, standard errors of regression parameter estimates. This implies that results found "statistically significant" in this study are relatively conservative.

2.5 Data Analysis

Multivariate regression techniques were used to examine the effects of the four-day week on parental travel outcomes. For each type of trip ("long", "short" and "day" trips) the impact of the four-day school week on the self-reported change relative to few years ago was estimated. As noted, these models provide the most reliable estimates of possible *causal* effects of the schedule change on household travel patterns. Regression estimates of the importance of six different factors, one of which was "changes in kid's school schedules", as underlying reasons for changes in travel patterns were also estimated. A finding that parents in four-day school districts are more likely to mention a change in the child's school schedule as an important reason for change in travel patterns would provide corroborating evidence of an impact of the four-day school week on travel patterns.

Additional regression models were then used to examine if there were differences in the number of trips per year, the number of travelers, the use of hotels, or overall expenditures between four-day and similar five-day parents.

2.6 Measuring and Modeling Travel Outcomes

Many of the study outcomes of interest can be considered "continuous". For example, a count of trips reported over one year may be modeled reliably by models designed for continuous variables (e.g. normal linear regressions). However, methods designed for "continuous" outcome variables may be less appropriate for a number of outcome variables in this study. For example, questions asking respondents how the number of trips has changed relative to a few years ago only reveal whether respondents have taken "the same", "more", or "fewer" trips than they did several years ago. This is a categorical variable, and the relative probabilities of reporting an increase or a decrease in the number of trips (relative to no change) were estimated using multinomial logistic regressions.

Other outcomes were binary (e.g. did the respondents stay at a hotel at least once or not), ordered categorical (e.g. question 3.b in survey instrument asking respondents to rate items on a 1-5 Likert scale in terms of importance; Appendix 1) and others censored (e.g. length of travel in days is a positive number of days if at least one trip was taken, and zero otherwise). Throughout the study, estimates from several different reasonable statistical models for each variable were obtained and compared to assure that the conclusions were not driven by modeling choices to any notable extent.

Further, for several of the outcomes of interest, the survey elicited more than one measure. For example, the frequency of "long" trips could be inferred from an explicit question that allowed respondents to select the appropriate category between "none", "one", "two", "three to four", or "five or more" (question 1; Appendix 1). The survey also asked that respondents list as many trips as they could recall (question 2; Appendix 1). The median values of the categories reported in question one and the count from all the long trips listed over the most recent two years in question two were compared for consistency, and results were estimated using each measure to ensure that conclusions are consistent across measures.

Overall, for each outcome, all reasonable measures were used and several models were estimated for each measure to take into account measure properties. Sensitivity analysis was conducted to ensure that findings are consistent across measures and do not depend on modeling decisions.[3]

2.7 Specification and Functional Form

All models held constant household size, number of children, age of youngest child, percent of adults working full and part time, whether income has increased or decreased since a few years ago, whether the head and/or spouse were working more hours or fewer hours relative to a few years ago, education of the respondent, indicators of owning a home and paying mortgage or renting (relative to owning a home, fully paid for) and an indicator of ownership of a vacation home/cabin.

Continuous and censored outcome variables also involved some decisions regarding the functional form of estimated relationships. The level of each outcome variable or its natural logarithm was used as a dependent variable, on a case by case basis.[4]

3. RESULTS

This study found that the implementation of a four-day school week has caused a sizable (and statistically significant) increase in day trips among parents of school children in four-day districts. The evidence also suggested that this increase in day trips has likely resulted in a reduction in long vacations among four-day district parents. Reductions in longer vacations resulted in fewer days spent on vacation, as well as reduced use of paid accommodation in Minnesota and elsewhere. These reductions in travel in and out of state, in turn, resulted in less expenditure on long trips.

The study found no empirical evidence that the frequency and nature of weekend trips was affected by the four-day school week. Four and five-day school week households reported statistically similar changes in weekend trips over time, nearly identical numbers of trips taken over the last year, as well as similar numbers of days spent on short trips, household members attending each trip, incidence of stay at a hotel or other paid accommodation venue and overall expenditures in short trips. This is the case for trips both in and out of state.

3.1 Impact of Four-day School Week on Day Trips

As noted, the most reliable estimates of the effect that the four-day school week had on travel patterns were obtained by comparing pre-to-post schedule changes in travel patterns reported by four-day school households to changes in the travel patterns reported by observationally identical households in regular districts over a similar time frame.

Table 1 presents these estimates of the effect that the four-day school week had on the probability that parents report decreases or increases in day trips (relative to reporting no change in day trips from few years ago). Parameter estimates imply that families in both types of districts were equally

[3] For example, three strategies were used for estimating the impact of the four-day week on the number of "long trips"; normal linear regression, a censored model that explicitly accounts for the fact that many people took no trips in any given year, and an ordered probit that simply uses the categorical information in the first survey question. Results were compared across specifications and any differences were reported and interpreted.

[4] Models using the level of observed outcome variables assume that parent characteristics are linearly related with the outcome, while models using the natural logarithm of each variable are appropriate if a change in observed parent characteristics is associated with a constant percent change in the outcomes. Logarithms are also less sensitive to outliers, and, often follow a more symmetric distribution than levels, and are more likely to satisfy the assumptions of linear regression and censored models for several outcomes. The decision on the functional forms used in each model was made based on theory and the empirical properties of each variable. Sensitivity of results to these decisions was tested where appropriate.

likely to report a decline in day trips relative to the last pre-four-day year (Table 1; columns 1 and 2). However, families in four-day districts were much more likely to report an increase in day trips than were otherwise similar families in five-day districts. The parameter estimate in column 3 is positive and statistically significant *($p<0.05$)*. The estimated marginal effect (column 4) implies that four-day district parents had an 11 percentage point higher probability of reporting an increase in day trips relative to observationally identical households in five-day districts.

Table 2 presents results on how important parents felt each of six factors was in explaining changes in day trips. Parameter estimates imply that among all households that reported a decline in day trips, five-day district parents were more likely to rate "changes in child's school schedule" as an important factor. Five-day households reporting declines assigned a 2.59 (out of 5) importance rating to school schedules while those in four-day districts reporting a decline in day trips only assigned an importance score of 1.89 to changes in kid's school schedule as a reason for the decline. The opposite is true for households that reported increases. Four-day households were more likely to credit changes in school schedules for increases in day trips than were five-day households (3.06 vs. 2.56 respectively). So, four-day households that experienced decreases in day trips were less likely to "blame" it on school schedules than were similar five-day households. On the other hand, among households that experienced increases, those in four-day districts were more likely to "credit" school schedule changes for the increase than similar five-day households. These findings are consistent with a positive impact of the four-day school week on day trips.

Some additional interesting patterns emerged regarding what parents found to be important determinants of changes in day trips, and how these factors interacted with the four-day school week. First, parents in five-day districts rated "changes in kids' sports schedules" higher in importance than parents in four-day districts. This difference was particularly large among those reporting declines in day trips; five-day parents rated sport schedules at 2.6 (out of 5) relative to only a 1.6 rating among four-day district households who experienced decreases in travels. This suggests that the four-day school week may be making it easier for parents to adhere to children's sports schedules without major disruptions in other day-travel plans.

Second, five-day parents also assigned much higher importance ratings to almost all other reasons for change (including changes in work schedules, changes in preferences and changes in other family circumstances).[5] This suggests that the four-day school week lessened the effects of other factors known to affect travels.

The results presented in Table 1 and Table 2 provide strong evidence that the four-day school week has caused an increase in the number of day trips among affected households.

Comparing the number of day trips reported by four-day households to that of observationally identical five-day households also shows results indicative of a positive effect of the four-day school week. Estimates showed that the four-day school week was associated with nearly two additional trips taken annually per household (Table 3). This represents a nearly 40 percent increase in day trips (the number of day trips taken by the average household in the survey was 4.44).[6]

Overall the study found strong evidence that the four-day school week has caused a sizable increase in the number of day trips taken by parents in affected school districts.

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[5] The only exception was "changes to financial circumstances" where results were mixed.

[6] Interpretation was based on estimates from censored regression in columns 3 (preferred estimate for the number of day trips). The estimated percent increase in column 4 and OLS estimates in columns 1 and 2 would imply slightly smaller but very similar effects.

3.2 Impact of Four-day School Week on "Weekend Trips"

There was no evidence that short (weekend) travel patterns varied to any significant extent between four and five-day district households.

The impact that the four-day school week had on the relative changes in weekend trips is examined in Table 4. Columns 1 and 2 present the predictors of reported declines in weekend trips while 3 and 4 present the predictors of an increase in weekend trips (relative to no change being reported). Parameter estimates associated with the four-day school week are not statistically different from zero. Therefore, there is no evidence that the four-day school week has affected the frequency of weekend trips.

Cross-sectional regressions comparing the number of reported trips and other short trip characteristics across districts corroborated this result. Households in four-day districts, relative to their counterparts in five-day districts, reported the same number of trips (Table 5), the same length of stay in weekend trips (Table 6), number of individuals attending each trip (Table 7), nights spent in a hotel or other paid accommodation venue (Table 8) and expenditures on short trips (Table 9). Additionally, the total number of trips and the percentage of short trips within the state of Minnesota were statistically identical across parents in four and five-day districts (Table 10). Finally, the duration, number of stays in a hotel,[7] number of nights spent in a hotel, number of household members attending short trips and expenditures for short trips *in–state* were also virtually identical for four and five-day district households (Table 11).

While the frequency of weekend trips and changes in patterns over time appeared very similar between the two groups, the reasons for the change were systematically different in four and five-day districts. Among households experiencing a decline in weekend trips, those in four-day districts placed less importance on changes in school schedules as a reason for the declines than those in five-day districts. The opposite was true for households that reported increases in weekend trips; those in four-day districts placed much higher importance on changes in school schedules as a reason for the increase in travel activity than did those in five-day districts (Table 12). Thus, it appears that parents in four-day districts believed that changes in school schedules have helped increase their weekend trips, but this was not reflected in the actual travel activity reported.

3.3 Impact of Four-day School Week on Long Trips

Table 13 presents comparisons of how the reported change in the number of long trips since the last pre-four-day schedule year for four-day parents faired relative to the change in long trips reported by similar five-day district parents over the same number of years. As was the case with day trips and short trips, parents from both districts were equally likely to report a decline in long trips relative to few years ago (columns 1 and 2). However, parents in four-day districts were *less* likely to report an increase in long trips than were similar parents in five-day districts (column 3) *($P<0.1$)*. Parents in four-day districts were 3.4 percentage points less likely to report an increase in long trips (column 4). This can be interpreted as evidence of a negative effect of the four-day school week.

Cross-sectional regressions comparing the number of long trips reported over the last two years corroborated this result, as four-day school week parents reported fewer long trips than similar five-day parents. Regression results in Table 14 suggest that, on average, families in four-day districts took between one third to one half of a trip fewer per two-year period, after holding constant family size and composition, economic circumstances and a number of other household attributes. These estimates were consistent across specifications and statistically significant *($p<0.05$)*. This implies

[7] "Hotels" in this paper includes motels, B&Bs, resorts and vacation home rentals. It excludes camping sites and RVs.

that, over two years, at least one in three families in four-day districts has skipped one long trip that they would have otherwise taken (if they lived in a regular district). The estimates imply at least a 27% decrease in long trips for the average family in four-day districts.

The study also examined the implications that this possible decline in long trips had for several measures of "travel intensity" (Table 15 and 16). Estimates indicate that four-day school week respondents who traveled spent a similar number of days on each trip as their counterparts for five-day districts. Because they took fewer trips, however, four-day families spent approximately one fewer day over a two year period on long trips.[8] The number of travelers per trip was not statistically different between four and five-day households, but because four-day week parents took fewer trips, the total number of person-trips (members x trips) was lower by about 0.9 persons in long trips over a two year period (Table 16).

The lower number of long trips among four-day district parents was also found to have implications for hotels. Results in Table 17 indicate that four-day parents have taken, on average, one fourth of a trip that required paid accommodation fewer than other parents in regular districts over two years. Stated another way, of eight families with the average sample characteristics, each year one would be expected to forego a trip requiring hotel stay that they would have taken if their district were a regular school week district. The reduction in trips involving paid accommodation lead to 1.5 fewer nights spent at a hotel over two years. All these estimates are statistically different from zero at a 5 percent level of significance or higher.

The study also estimated the implications of the reduction in long trips for overall expenditures. Estimates in Table 18 indicate that parents in four-day districts spent $675 less on long trips than similar households in five-day districts over two years. These estimates are not statistically significant at conventional levels[9] but point estimates seem consistent with the reductions in the number of nights with paid accommodation and other expenses due to fewer trips per four-day school district family.

The study also examined the association between living in a four-day school district and vacationing in Minnesota destinations. Nearly 80 percent of all respondents did not take any long trips in Minnesota, while 10 percent took all of their long trips in the state, with the remaining 10 percent splitting time between in and out of state. Of the nearly 20 percent of respondents who took at least one trip in the state, 13 percent took only one and nearly 6 percent took two or three trips in Minnesota (Table 19).

Households in four-day school districts took fewer trips in Minnesota. The average household in a four-day district took 1/5th of a trip less over two years than otherwise similar households in five-day districts; Table 20, (Column 1). The lower number of trips in Minnesota was not only due to the fact that four-day district households traveled less in general, but also because they took a smaller share of their trips within the state by about 10 percent fewer trips; Table 20 (Column 2).

Additionally, the likelihood that at least one of their two most recent trips to was in the state is 15 percentage points lower for four-day district households *(P<0.05)*. The study considered the

[8] These impacts on duration are estimated imprecisely, however, and are statistically not significant at conventional levels. However, given that there is no evidence of a systematic difference in how long households stay on each trip and strong evidence of fewer trips, lack of significance in this case is likely due to "type I" error.

[9] This is not surprising, since measurement error in the outcome variable causes significant reductions in precision. Actual expenses for every one of the trips reported over the last two years are likely the most difficult piece of information to recall out of all variables elicited in regards to these long trips. People tend to recall where they went, approximately what time of the year, with whom and where they stayed, but estimating the overall cost of each trip is substantially more taxing.

possibility that trips within the state may not require paid accommodation. If this were the case, this reduction in long trips within Minnesota may not be as costly to the state's industry. However, households in four-day districts were 11 percentage points less likely than their counterparts in five-day districts to have stayed in a Minnesota hotel at least once in the last two years.

Table 21 summarizes selected findings regarding the reduction in long trips due to the four day school week. Column one presents the averages of the number of long trips taken, nights in a hotel and money spent on all trips, as well as the share of trips taken in Minnesota, the number of trips in state and the percent of households that stayed in a Minnesota hotel at least once over the past two years. Column two presents the estimated decline in these quantities attributed to the four day school week. Column three presents the implied percent decline. As noted, the estimated decline in total trips over two years is at least 1/3rd of a trip, marking a 27 percent change from the number of trips taken by the average family in this sample. As a result, there was a similar percentage drop in nights spent in hotels (nearly 1.5 nights for a 28 percent decline) and overall expenditures ($675 for a 29 percent decline).

The long trips that four-day households skipped appear to have been disproportionally in-state. Four-day week families were nine percentage points less likely to take an in-state trip (a 40 percent drop from the average share of in state trips in the sample). Their lower propensity to take any long trips and disproportionate tendency to skip in state trips resulted in 1/5th of a trip fewer in-state (a 49 percent change from the sample average) and an 11 percentage point decline in the probability of having used a MN hotel in the past two years (a 61 percent change in likelihood that the average household in the sample used a Minnesota hotel for a long trip).

4. DISCUSSION AND CONCLUDING REMARKS

Overall, it appears that the four-day school week has had a positive impact on day trips among families in Minnesota, but this impact may be traded off against longer vacations. The evidence for a causal impact of the four-day week on day trips was strong given that the increase in day trips since the last pre-four-day year in four-day parents exceeded changes reported by similar parents in five-day districts over the same years. Results regarding parents' beliefs about the reasons underlying changes in travel patterns also indicated that four-day parents credited school schedules for any increases to a greater extent than similar five-day parents. Finally, cross-sectional regressions also provided strong evidence that four-day parents took substantially more day trips than similar parents in five-day districts.

The study also found evidence (albeit somewhat weaker statistically) that the four-day week may have caused a decrease in longer trips. Results point to disproportionate increases in long trips among five-day parents relative to four-day parents, indicating a negative impact of the four-day week. Cross-sectional results were also consistent; parents in four-day districts reported fewer trips over the last two years than observationally identical parents in five-day districts.

Most people would, a priori, expect to find an increase of weekend trips in four-day households. Yet the effect was clearly absent in the reported data.

This was the first study to examine the impact of the four day school week on parental travel patterns, and it was strictly based on the Minnesota experience. Results indicated that the four day week has had important impacts on travel patterns that cam have lasting implications for the Tourism Industry in Minnesota and elsewhere. More research is needed to examine if travel pattern changes due to four day school weeks are have been similar elsewhere.

4.1 Limitations and Directions for Future Research

Despite efforts to choose a reasonable control group and to elicit information on past travel retroactively, this was to a large extent a cross-sectional study. The usual caveats that typically apply to analysis of cross-sectional observational data apply here. The sample size was moderate, but appropriate for examining the broader impact of a four-day week on travels, however, more data with a true longitudinal component has the potential to shed much more light on how school schedules and travel patterns are interacting. Also, this survey did not collect substantial detail on day trips due to concerns about survey length, respondent burden and measurement error due to imperfect recall. Day trips are much harder to recall retroactively, so identifying large secondary panel data that cover short travel behaviors for Minnesotans or households in other areas that have adopted four day schedules has the potential to significantly expand on our ability to understand day trips. Overall, more information on the day trips is needed to fully be able to assess the likely overall effect of the travel behavior changes discussed in this paper.

TABLE 1: Impact of Four Day School Week on Reported Changes in Day Trips.

VARIABLES	(1) Coef. Decrease	(3) Mfx Decrease	(2) Coef. Increase	(5) Mfx Increase
Four Day	0.098	-0.003	0.808**	0.109**
	(0.345)	(0.023)	(0.397)	(0.053)
Nr. Adults	-0.651	-0.047	0.091	0.020
	(0.423)	(0.029)	(0.420)	(0.055)
Pcnt. Adults working FT	-0.525	-0.050	1.074	0.149
	(0.791)	(0.054)	(0.855)	(0.115)
Pcnt. Adults working PT	-2.231**	-0.176***	1.522	0.229*
	(0.975)	(0.068)	(1.106)	(0.139)
Income Increased	-0.666	-0.051**	0.868*	0.141*
	(0.457)	(0.023)	(0.458)	(0.076)
Income Decreased	0.371	0.022	0.395	0.051
	(0.434)	(0.034)	(0.473)	(0.069)
Respondent Works More	0.543	0.048	-0.401	-0.057
	(0.396)	(0.034)	(0.539)	(0.061)
Respondent Works Less	1.056**	0.111*	-0.361	-0.058
	(0.466)	(0.061)	(0.658)	(0.064)
Spouse Works More	0.195	0.022	-0.622	-0.076
	(0.443)	(0.035)	(0.578)	(0.059)
Spouse Works Less	0.231	0.027	-0.896	-0.098**
	(0.490)	(0.041)	(0.649)	(0.049)
Nr. Children (<18 yrs)	-0.027	0.000	-0.159	-0.021
	(0.197)	(0.014)	(0.242)	(0.032)
Age Youngest Kid	0.029	0.001	0.087	0.011
	(0.049)	(0.003)	(0.061)	(0.008)
Education	-0.081	-0.008	0.191	0.026
	(0.184)	(0.013)	(0.171)	(0.022)
Owns Home (w. Mortgage)	0.102	0.002	0.488	0.059
	(0.595)	(0.041)	(0.606)	(0.068)
Rents Home	0.085	0.004	0.126	0.016
	(0.702)	(0.051)	(0.929)	(0.130)
Owns Cabin	-0.395	-0.021	-0.383	-0.043
	(0.567)	(0.032)	(0.496)	(0.055)

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, N=266

TABLE 2: Predictors of Importance Ratings on Reasons for Changes in Day Trips.

VARIABLES	(1) School	(2) Sports	(3) Work	(4) Preference	(5) Family	(6) Finance
(five-day)x(decline in day trips)	2.587***	2.592***	2.664***	1.932***	1.707***	3.595***
	(0.212)	(0.202)	(0.209)	(0.161)	(0.176)	(0.194)
(four-day)x(decline in day trips)	1.891***	1.600***	2.135***	1.379***	1.516***	4.113***
	(0.221)	(0.210)	(0.218)	(0.167)	(0.184)	(0.202)
(five-day)x(increase in day trips)	2.557***	3.158***	2.441***	2.742***	2.676***	2.811***
	(0.263)	(0.251)	(0.260)	(0.200)	(0.219)	(0.241)
(four-day)x(increase in day trips)	3.064***	2.736***	1.780***	1.635***	1.721***	2.236***
	(0.244)	(0.233)	(0.242)	(0.185)	(0.203)	(0.224)
Nr. Adults	0.198	-0.002	0.220	0.282**	0.110	0.193
	(0.159)	(0.152)	(0.158)	(0.121)	(0.133)	(0.146)
Pcnt. Adults working FT	0.344	0.491	0.446	0.305	0.163	0.171
	(0.325)	(0.310)	(0.322)	(0.247)	(0.271)	(0.298)
Pcnt. Adults working PT	0.292	0.420	0.440	0.156	0.177	0.367
	(0.397)	(0.378)	(0.392)	(0.301)	(0.330)	(0.363)
Income Increased	-0.054	-0.098	0.118	0.154	0.063	-0.054
	(0.171)	(0.163)	(0.169)	(0.129)	(0.142)	(0.156)
Income Decreased	-0.035	-0.006	0.197	0.328**	0.080	0.510***
	(0.183)	(0.175)	(0.181)	(0.139)	(0.153)	(0.168)
Respondent Works More	0.126	-0.004	0.143	-0.015	-0.077	-0.088
	(0.177)	(0.169)	(0.175)	(0.134)	(0.147)	(0.162)
Respondent Works Less	-0.367*	-0.483**	-0.210	-0.161	-0.041	-0.155
	(0.218)	(0.208)	(0.216)	(0.165)	(0.181)	(0.200)
Spouse Works More	-0.297	-0.517***	-0.144	-0.175	0.062	-0.267
	(0.189)	(0.181)	(0.187)	(0.144)	(0.157)	(0.173)
Spouse Works Less	0.047	-0.244	-0.102	-0.109	0.105	-0.084
	(0.206)	(0.196)	(0.203)	(0.156)	(0.171)	(0.188)
Nr. Children (<18 yrs)	0.117	0.220***	0.148*	0.083	0.166**	0.158**
	(0.081)	(0.077)	(0.080)	(0.061)	(0.067)	(0.074)
Age Youngest Kid	-0.043**	0.041**	-0.014	-0.010	-0.030*	-0.004
	(0.021)	(0.020)	(0.021)	(0.016)	(0.018)	(0.019)
Owns Cabin	0.188	0.153	-0.161	-0.047	-0.116	0.032
	(0.200)	(0.191)	(0.198)	(0.152)	(0.166)	(0.183)
R-squared	0.621	0.663	0.586	0.636	0.583	0.789

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, N=266

TABLE 3: Impact of Four Day School Week on the Number of Day Trips.

VARIABLES	OLS		Censored	
	Trips	ln(trips)	Trips	ln(trips)
Four Day	1.777***	0.328***	1.919***	0.349***
	(0.506)	(0.100)	(0.549)	(0.107)
Nr. Adults	0.194	0.072	0.359	0.097
	(0.654)	(0.117)	(0.624)	(0.121)
Pcnt. Adults working FT	1.445	0.444*	2.239*	0.570**
	(1.146)	(0.234)	(1.281)	(0.248)
Pcnt. Adults working PT	2.013	0.438	2.850*	0.569*
	(1.488)	(0.293)	(1.576)	(0.305)
Income Increased	1.588**	0.236*	1.680**	0.250*
	(0.667)	(0.125)	(0.662)	(0.129)
Income Decreased	-0.085	-0.054	-0.238	-0.079
	(0.665)	(0.137)	(0.729)	(0.142)
Respondent Works More	-0.398	-0.059	-0.388	-0.055
	(0.605)	(0.123)	(0.691)	(0.135)
Respondent Works Less	-0.054	0.135	0.226	0.181
	(0.781)	(0.146)	(0.847)	(0.165)
Spouse Works More	-0.894	-0.104	-0.887	-0.103
	(0.627)	(0.124)	(0.755)	(0.147)
Spouse Works Less	-0.153	-0.045	-0.117	-0.040
	(0.803)	(0.164)	(0.800)	(0.156)
Nr. Children (<18 yrs)	-0.231	-0.057	-0.326	-0.071
	(0.264)	(0.055)	(0.311)	(0.060)
Age Youngest Kid	0.186**	0.018	0.164**	0.014
	(0.073)	(0.014)	(0.081)	(0.016)
Education	0.137	0.063	0.243	0.080
	(0.254)	(0.046)	(0.265)	(0.052)
Owns Home (w. Mortgage)	0.042	0.085	0.287	0.125
	(0.866)	(0.186)	(0.927)	(0.180)
Rents Home	-0.912	-0.260	-1.311	-0.322
	(1.136)	(0.243)	(1.243)	(0.241)
Owns Cabin	-0.432	-0.093	-0.522	-0.105
	(0.720)	(0.143)	(0.787)	(0.153)
R-squared	0.150	0.155		

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1, N=266

TABLE 4: Impact of Four Day School Week on Changes in Short ("Weekend") Trips.

VARIABLES	(1) Multinomial Coef. Decrease	(2) Multinomial Mfx Decrease	(3) Multinomial Coef. Increase	(4) Multinomial Mfx Increase
Four Day	0.036	0.018	-0.329	-0.034
	(0.315)	(0.064)	(0.407)	(0.038)
Nr. Adults	-0.499	-0.110	0.158	0.032
	(0.390)	(0.079)	(0.460)	(0.042)
Pcnt. Adults working FT	-0.026	-0.013	0.226	0.023
	(0.736)	(0.150)	(0.923)	(0.090)
Pcnt. Adults working PT	-0.074	-0.034	0.568	0.059
	(0.915)	(0.189)	(1.339)	(0.134)
Income Increased	-0.366	-0.141**	1.650***	0.240***
	(0.426)	(0.069)	(0.464)	(0.070)
Income Decreased	0.649*	0.146*	-0.071	-0.029
	(0.386)	(0.085)	(0.611)	(0.052)
Respondent Works More	0.303	0.107	-1.510***	-0.127***
	(0.409)	(0.088)	(0.542)	(0.035)
Respondent Works Less	0.164	0.052	-0.563	-0.052
	(0.463)	(0.101)	(0.738)	(0.050)
Spouse Works More	0.757*	0.120	1.022*	0.084
	(0.451)	(0.095)	(0.530)	(0.062)
Spouse Works Less	0.419	0.021	1.343**	0.161
	(0.449)	(0.090)	(0.634)	(0.099)
Nr. Children (<18 yrs)	0.044	0.009	0.005	-0.001
	(0.182)	(0.038)	(0.258)	(0.025)
Age Youngest Kid	0.063	0.015	-0.063	-0.008
	(0.048)	(0.010)	(0.066)	(0.006)
Education	-0.130	-0.017	-0.314*	-0.027
	(0.153)	(0.031)	(0.175)	(0.017)
Owns Home (w. Mortgage)	-0.065	-0.054	1.513	0.119*
	(0.494)	(0.106)	(1.063)	(0.064)
Rents Home	0.366	-0.042	1.905	0.287
	(0.686)	(0.144)	(1.160)	(0.238)
Owns Cabin	-0.583	-0.137*	0.788	0.124
	(0.520)	(0.080)	(0.567)	(0.095)

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=272

TABLE 5: Impact of Four Day School Week on the Number of Short Trips.

VARIABLES	(1) OLS	(2) Censored	(3) Ordered
Four Day	0.117	0.133	0.069
	(0.214)	(0.312)	(0.138)
Nr. Adults	0.193	0.454	0.201
	(0.245)	(0.359)	(0.161)
Pcnt. Adults working FT	0.100	0.450	0.195
	(0.485)	(0.726)	(0.322)
Pcnt. Adults working PT	-0.171	-0.085	-0.048
	(0.612)	(0.920)	(0.409)
Income Increased	0.288	0.425	0.182
	(0.262)	(0.378)	(0.168)
Income Decreased	-0.274	-0.378	-0.179
	(0.289)	(0.420)	(0.187)
Respondent Works More	-0.740***	-1.005**	-0.460***
	(0.274)	(0.398)	(0.177)
Respondent Works Less	-0.072	-0.228	-0.097
	(0.335)	(0.490)	(0.219)
Spouse Works More	0.397	0.501	0.232
	(0.297)	(0.428)	(0.190)
Spouse Works Less	0.514	0.697	0.321
	(0.318)	(0.457)	(0.203)
Nr. Children (<18 yrs)	0.058	0.137	0.053
	(0.123)	(0.179)	(0.079)
Age Youngest Kid	0.014	0.010	0.005
	(0.032)	(0.047)	(0.021)
Education	-0.040	-0.112	-0.043
	(0.107)	(0.154)	(0.069)
Owns Home (w. Mortgage)	0.229	0.266	0.112
	(0.369)	(0.533)	(0.238)
Rents Home	-0.491	-0.768	-0.351
	(0.485)	(0.725)	(0.323)
Owns Cabin	0.778**	0.919**	0.430**
	(0.313)	(0.442)	(0.198)
R-squared	0.156		

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=272

TABLE 6: Impact of Four Day School Week on Length of Stay in Short Trips.

VARIABLES	(1) Days	(2) ln(1+days)	(3) Days/trip
Four Day	0.594	0.100	0.033
	(0.633)	(0.133)	(0.186)
Nr. Adults	0.716	0.203	0.405**
	(0.728)	(0.148)	(0.203)
Pcnt. Adults working FT	0.028	0.010	0.226
	(1.092)	(0.263)	(0.383)
Pcnt. Adults working PT	-0.335	-0.174	-0.026
	(1.640)	(0.343)	(0.487)
Income Increased	0.459	0.186	0.134
	(0.773)	(0.160)	(0.219)
Income Decreased	-1.110	-0.168	-0.133
	(0.854)	(0.175)	(0.259)
Respondent Works More	-1.902**	-0.356**	-0.218
	(0.755)	(0.161)	(0.238)
Respondent Works Less	-0.212	-0.141	-0.213
	(0.983)	(0.191)	(0.280)
Spouse Works More	0.583	0.111	-0.157
	(0.900)	(0.180)	(0.256)
Spouse Works Less	1.258	0.250	0.161
	(0.963)	(0.198)	(0.283)
Nr. Children (<18 yrs)	0.147	0.051	0.082
	(0.302)	(0.070)	(0.103)
Age Youngest Kid	0.094	0.007	0.004
	(0.091)	(0.019)	(0.028)
Education	-0.130	-0.058	-0.117
	(0.324)	(0.066)	(0.084)
Owns Home (w. Mortgage)	1.065	0.129	0.063
	(1.030)	(0.228)	(0.334)
Rents Home	-0.992	-0.278	-0.317
	(1.164)	(0.286)	(0.430)
Owns Cabin	2.455**	0.332	0.325
	(1.071)	(0.203)	(0.271)
R-squared	0.126	0.112	0.082

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=273

TABLE 7: Impact of Four Day School Week on Household Members in Short Trips.

VARIABLES	(1) Members x Trips	(2) Ln(1+members)	(3) Members/trip
Four Day	0.745	0.158	0.170
	(0.831)	(0.147)	(0.252)
Nr. Adults	1.543	0.285*	0.738***
	(0.937)	(0.166)	(0.284)
Pcnt. Adults working FT	-0.936	-0.010	0.197
	(1.877)	(0.332)	(0.569)
Pcnt. Adults working PT	-2.017	-0.227	-0.079
	(2.354)	(0.416)	(0.714)
Income Increased	0.117	0.079	-0.004
	(1.003)	(0.177)	(0.304)
Income Decreased	-0.946	-0.122	-0.020
	(1.103)	(0.195)	(0.335)
Respondent Works More	-2.744***	-0.395**	-0.419
	(1.050)	(0.186)	(0.319)
Respondent Works Less	-0.779	-0.304	-0.481
	(1.277)	(0.226)	(0.387)
Spouse Works More	1.342	0.207	0.110
	(1.135)	(0.201)	(0.344)
Spouse Works Less	1.217	0.161	-0.037
	(1.208)	(0.214)	(0.367)
Nr. Children (<18 yrs)	1.267***	0.173**	0.581***
	(0.469)	(0.083)	(0.142)
Age Youngest Kid	0.005	0.002	-0.017
	(0.124)	(0.022)	(0.038)
Education	-0.075	-0.055	-0.109
	(0.406)	(0.072)	(0.123)
Owns Home (w. Mortgage)	1.538	0.203	0.125
	(1.408)	(0.249)	(0.427)
Rents Home	-1.159	-0.220	-0.169
	(1.859)	(0.329)	(0.564)
Owns Cabin	2.604**	0.283	0.145
	(1.193)	(0.211)	(0.362)
R-squared	0.150	0.125	0.158

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=273

TABLE 8: Impact of Four Day School Week on the Incidence of Paid Accommodations in Short Trips.

VARIABLES	(1) Trips w Hotel Stay	(2) ln(trips w hotel stay)	(3) Share Trips With Hotel Stay	(4) Hotel Nights	(5) Ln(hotel nights)
Four Day	-0.113	-0.026	-0.068	-0.180	0.012
	(0.149)	(0.070)	(0.058)	(0.384)	(0.113)
Nr. Adults	0.020	0.002	-0.029	0.440	0.095
	(0.168)	(0.079)	(0.065)	(0.432)	(0.127)
Pcnt. Adults working FT	-0.473	-0.203	-0.167	-1.315	-0.364
	(0.337)	(0.158)	(0.131)	(0.866)	(0.255)
Pcnt. Adults working PT	-0.757*	-0.340*	-0.238	-1.883*	-0.488
	(0.422)	(0.198)	(0.165)	(1.087)	(0.320)
Income Increased	0.308*	0.105	0.036	0.555	0.086
	(0.180)	(0.084)	(0.070)	(0.463)	(0.136)
Income Decreased	-0.295	-0.147	-0.066	-0.929*	-0.272*
	(0.198)	(0.093)	(0.077)	(0.509)	(0.150)
Respondent Works More	-0.183	-0.097	-0.017	-0.462	-0.143
	(0.188)	(0.088)	(0.073)	(0.485)	(0.143)
Respondent Works Less	-0.001	-0.009	0.039	-0.006	-0.006
	(0.229)	(0.107)	(0.089)	(0.589)	(0.174)
Spouse Works More	0.057	0.058	-0.002	0.110	0.089
	(0.204)	(0.096)	(0.079)	(0.524)	(0.154)
Spouse Works Less	0.362*	0.166	0.062	0.865	0.237
	(0.217)	(0.102)	(0.084)	(0.558)	(0.164)
Nr. Children (<18 yrs)	0.070	0.027	0.020	0.143	0.044
	(0.084)	(0.039)	(0.033)	(0.217)	(0.064)
Age Youngest Kid	-0.003	-0.005	-0.006	0.018	-0.001
	(0.022)	(0.010)	(0.009)	(0.057)	(0.017)
Education	-0.012	0.001	-0.001	-0.029	-0.005
	(0.073)	(0.034)	(0.028)	(0.188)	(0.055)
Owns Home (w. Mortgage)	0.078	0.005	-0.006	-0.044	-0.046
	(0.253)	(0.118)	(0.098)	(0.650)	(0.191)
Rents Home	-0.520	-0.261*	-0.159	-1.390	-0.447*
	(0.333)	(0.156)	(0.130)	(0.858)	(0.253)
Owns Cabin	0.075	0.049	-0.052	0.427	0.112
	(0.214)	(0.100)	(0.083)	(0.551)	(0.162)
R-squared	0.087	0.078	0.038	0.096	0.076

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=273

TABLE 9: Impact of Four Day School Week on Expenditures in Short Trips.

VARIABLES	(1) Cost	(2) lncost	(3) costpt	(4) lncostpt
Four Day	166.481	0.172	8.369	0.072
	(135.666)	(0.426)	(56.569)	(0.374)
Nr. Adults	192.790	0.540	55.265	0.532
	(152.930)	(0.480)	(63.767)	(0.422)
Pcnt. Adults working FT	-316.981	0.157	-189.860	0.173
	(306.435)	(0.962)	(127.774)	(0.846)
Pcnt. Adults working PT	-347.848	-0.984	-233.530	-0.846
	(384.474)	(1.207)	(160.315)	(1.061)
Income Increased	97.002	0.435	69.215	0.356
	(163.819)	(0.514)	(68.308)	(0.452)
Income Decreased	-366.179**	-0.503	-154.079**	-0.410
	(180.044)	(0.565)	(75.073)	(0.497)
Respondent Works More	-195.421	-0.669	14.236	-0.425
	(171.486)	(0.538)	(71.505)	(0.473)
Respondent Works Less	216.998	-0.134	151.361*	-0.088
	(208.509)	(0.655)	(86.942)	(0.575)
Spouse Works More	250.583	0.452	-4.038	0.272
	(185.312)	(0.582)	(77.270)	(0.511)
Spouse Works Less	420.590**	0.557	54.520	0.342
	(197.310)	(0.620)	(82.273)	(0.544)
Nr. Children (<18 yrs)	-4.364	0.188	-4.760	0.184
	(76.639)	(0.241)	(31.956)	(0.211)
Age Youngest Kid	-1.622	-0.010	-2.546	-0.014
	(20.194)	(0.063)	(8.420)	(0.056)
Education	-6.265	-0.251	-21.568	-0.259
	(66.362)	(0.208)	(27.671)	(0.183)
Owns Home (w. Mortgage)	64.639	0.381	-32.369	0.278
	(229.887)	(0.722)	(95.856)	(0.634)
Rents Home	-112.439	-0.409	49.268	-0.233
	(303.500)	(0.953)	(126.551)	(0.837)
Owns Cabin	387.443**	1.131*	70.781	0.819
	(194.800)	(0.612)	(81.226)	(0.538)
R-squared	0.117	0.089	0.089	0.079

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=273

TABLE 10: Impact of Four Day School Week on Number of Short Trips in Minnesota.

VARIABLES	(1) Trips in MN	(2) Ln(trips) in MN	(3) % trips in MN
Four Day	-0.038	0.014	-0.031
	(0.209)	(0.082)	(0.060)
Nr. Adults	0.058	0.032	0.020
	(0.235)	(0.093)	(0.068)
Pcnt. Adults working FT	0.052	0.051	0.097
	(0.472)	(0.186)	(0.136)
Pcnt. Adults working PT	-0.365	-0.174	-0.092
	(0.592)	(0.233)	(0.171)
Income Increased	0.182	0.101	0.076
	(0.252)	(0.099)	(0.073)
Income Decreased	-0.165	-0.052	0.028
	(0.277)	(0.109)	(0.080)
Respondent Works More	-0.494*	-0.196*	-0.071
	(0.264)	(0.104)	(0.076)
Respondent Works Less	-0.256	-0.127	-0.121
	(0.321)	(0.126)	(0.093)
Spouse Works More	0.164	0.056	-0.037
	(0.285)	(0.112)	(0.083)
Spouse Works Less	0.465	0.184	0.054
	(0.304)	(0.119)	(0.088)
Nr. Children (<18 yrs)	0.114	0.059	0.062*
	(0.118)	(0.046)	(0.034)
Age Youngest Kid	0.012	0.004	0.001
	(0.031)	(0.012)	(0.009)
Education	-0.046	-0.030	-0.036
	(0.102)	(0.040)	(0.030)
Owns Home (w. Mortgage)	0.144	0.075	0.015
	(0.354)	(0.139)	(0.102)
Rents Home	-0.449	-0.143	-0.022
	(0.467)	(0.184)	(0.135)
Owns Cabin	0.736**	0.232*	0.093
	(0.300)	(0.118)	(0.087)
R-squared	0.097	0.108	0.093

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=273

TABLE 11: Impact of Four Day School Week on Various Other Short-Trip Outcomes in Minnesota.

VARIABLES	(1) Days	(2) Hotel Stays	(3) Hotel Nights	(4) Persons	(5) Cost
Four Day	0.204	-0.170	-0.246	0.030	-0.019
	(0.572)	(0.134)	(0.323)	(0.812)	(0.383)
Nr. Adults	0.368	-0.045	0.272	0.560	0.419
	(0.684)	(0.144)	(0.372)	(1.041)	(0.454)
Pcnt. Adults working FT	0.467	-0.367	-0.968	-0.514	0.462
	(1.082)	(0.370)	(0.836)	(1.916)	(0.860)
Pcnt. Adults working PT	-0.408	-0.603	-1.474	-2.236	-0.361
	(1.605)	(0.399)	(0.949)	(2.193)	(1.034)
Income Increased	0.294	0.226	0.450	0.349	0.391
	(0.725)	(0.177)	(0.437)	(0.939)	(0.462)
Income Decreased	-0.713	-0.228	-0.658*	-0.618	-0.226
	(0.803)	(0.144)	(0.367)	(1.021)	(0.495)
Respondent Works More	-1.322*	-0.070	-0.181	-2.196**	-0.517
	(0.699)	(0.178)	(0.452)	(0.900)	(0.458)
Respondent Works Less	-0.677	-0.096	-0.269	-1.280	-0.304
	(0.826)	(0.176)	(0.420)	(1.153)	(0.604)
Spouse Works More	-0.009	-0.146	-0.424	0.846	0.164
	(0.847)	(0.173)	(0.438)	(1.032)	(0.507)
Spouse Works Less	1.049	0.232	0.489	1.384	0.412
	(0.841)	(0.186)	(0.488)	(1.175)	(0.565)
Nr. Children (<18 yrs)	0.357	0.142*	0.308*	1.456***	0.286
	(0.284)	(0.073)	(0.157)	(0.466)	(0.216)
Age Youngest Kid	0.084	0.009	0.042	0.022	-0.015
	(0.083)	(0.020)	(0.049)	(0.114)	(0.056)
Education	-0.167	-0.006	-0.016	-0.146	-0.171
	(0.299)	(0.069)	(0.162)	(0.419)	(0.189)
Owns Home (w. Mortgage)	0.871	0.079	0.043	0.978	0.171
	(0.968)	(0.182)	(0.497)	(1.313)	(0.653)
Rents Home	-0.745	-0.358*	-0.976*	-0.941	0.041
	(1.071)	(0.193)	(0.537)	(1.502)	(0.852)
Owns Cabin	2.034**	0.153	0.447	2.811**	0.793
	(0.963)	(0.198)	(0.519)	(1.342)	(0.539)
R-squared	0.106	0.088	0.096	0.137	0.089

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=273

TABLE 12: Predictors of Importance Ratings on Reasons for Changes in Weekend Trips.

VARIABLES	(1) School	(2) Sports	(3) Work	(4) Family	(5) Preferences	(6) Finance
(five-day)x(decline) ST	1.728***	1.656***	1.975***	1.189***	0.840***	2.664***
	(0.224)	(0.245)	(0.255)	(0.206)	(0.172)	(0.226)
(four-day)x(decline) ST	1.196***	1.136***	1.587***	0.678***	0.671***	3.089***
	(0.250)	(0.238)	(0.252)	(0.173)	(0.152)	(0.209)
(five-day)x(increase) ST	0.939***	1.653***	0.821***	0.627***	0.952***	2.085***
	(0.294)	(0.345)	(0.239)	(0.216)	(0.275)	(0.303)
(four-day)x(increase) ST	2.509***	1.808***	1.498***	0.482**	1.209***	2.251***
	(0.357)	(0.376)	(0.332)	(0.222)	(0.251)	(0.336)
Nr. Adults	0.184	0.077	0.220	0.166	-0.037	0.036
	(0.138)	(0.159)	(0.154)	(0.107)	(0.097)	(0.109)
Pcnt. Adults working FT	-0.310	0.434	0.208	0.193	0.166	0.293
	(0.312)	(0.297)	(0.310)	(0.270)	(0.199)	(0.242)
Pcnt. Adults working PT	-0.461	0.110	0.807**	-0.036	0.343	0.172
	(0.380)	(0.398)	(0.394)	(0.306)	(0.263)	(0.341)
Income Increased	-0.045	0.182	0.186	0.234*	0.317***	-0.198
	(0.177)	(0.184)	(0.160)	(0.134)	(0.114)	(0.168)
Income Decreased	0.372**	0.261	0.193	-0.022	0.079	0.331**
	(0.186)	(0.170)	(0.197)	(0.151)	(0.139)	(0.150)
Respondent Works More	0.000	-0.117	0.016	-0.135	-0.358***	0.048
	(0.179)	(0.176)	(0.185)	(0.138)	(0.113)	(0.158)
Respondent Works Less	-0.300	-0.319	-0.293	-0.232	-0.189	-0.005
	(0.242)	(0.218)	(0.236)	(0.173)	(0.171)	(0.198)
Spouse Works More	-0.032	-0.114	0.186	-0.061	0.177	-0.066
	(0.198)	(0.190)	(0.197)	(0.150)	(0.132)	(0.173)
Spouse Works Less	-0.195	-0.263	0.109	0.281*	-0.043	0.129
	(0.177)	(0.194)	(0.202)	(0.152)	(0.143)	(0.167)
Nr. Children (<18 yrs)	0.091	0.236***	0.027	0.214***	0.044	0.153**
	(0.086)	(0.085)	(0.076)	(0.068)	(0.059)	(0.066)
Age Youngest Kid	-0.050**	0.044**	-0.048**	-0.058***	-0.001	0.006
	(0.019)	(0.020)	(0.021)	(0.018)	(0.016)	(0.018)
Owns Cabin	0.098	0.148	0.072	-0.141	-0.121	0.021
	(0.191)	(0.215)	(0.191)	(0.125)	(0.127)	(0.176)
R-squared	0.454	0.404	0.449	0.360	0.339	0.719

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=266

TABLE 13: Impact of Four Day School Week on Changes in Long Trips.

VARIABLES	(1) Coef. Decreased	(2) Mfx Decreased	(3) Coef. Increased	(4) Mfx Increased
Four Day	-0.144	-0.015	-1.016*	-0.039
	(0.330)	(0.054)	(0.598)	(0.025)
Nr. Adults	0.272	0.045	0.063	0.000
	(0.383)	(0.063)	(0.589)	(0.023)
Pcnt. Adults working FT	-1.784**	-0.304**	0.675	0.042
	(0.790)	(0.131)	(1.555)	(0.061)
Pcnt. Adults working PT	-0.718	-0.132	1.451	0.063
	(0.956)	(0.159)	(1.797)	(0.070)
Income Increased	-0.101	-0.031	1.274**	0.070
	(0.406)	(0.063)	(0.611)	(0.044)
Income Decreased	0.369	0.076	-1.522	-0.047*
	(0.424)	(0.079)	(1.206)	(0.025)
Respondent Works More	0.474	0.095	-1.560**	-0.051**
	(0.414)	(0.077)	(0.788)	(0.023)
Respondent Works Less	-0.378	-0.053	-0.966	-0.027
	(0.529)	(0.076)	(1.080)	(0.025)
Spouse Works More	0.094	0.015	0.112	0.004
	(0.449)	(0.077)	(0.753)	(0.031)
Spouse Works Less	0.254	0.036	0.707	0.032
	(0.464)	(0.083)	(0.847)	(0.050)
Nr. Children (<18 yrs)	0.237	0.040	-0.034	-0.003
	(0.187)	(0.031)	(0.330)	(0.013)
Age Youngest Kid	-0.030	-0.005	-0.025	-0.001
	(0.049)	(0.008)	(0.084)	(0.003)
Education	0.149	0.025	-0.069	-0.004
	(0.164)	(0.027)	(0.269)	(0.010)
Owns Home (w. Mortgage)	2.343**	0.294***	-0.839	-0.060
	(1.081)	(0.088)	(0.770)	(0.051)
Rents Home	1.305	0.287	-1.843	-0.045**
	(1.225)	(0.288)	(1.321)	(0.019)
Other Arrangement	2.974**	0.606***	1.540	0.001
	(1.394)	(0.229)	(1.704)	(0.071)
Owns Cabin	-0.325	-0.052	0.224	0.013
	(0.508)	(0.072)	(0.706)	(0.034)

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=275

TABLE 14: Impact of Four Day School Week on the Number of Long Trips per Two-Year Period.

VARIABLES	(1) OLS	(2) Censored	(3) Ordered
Four Day	-0.354**	-0.494**	-0.316**
	(0.163)	(0.228)	(0.144)
Nr. Adults	0.111	0.218	0.151
	(0.183)	(0.258)	(0.163)
Pcnt. Adults working FT	-0.284	-0.296	-0.203
	(0.381)	(0.527)	(0.333)
Pcnt. Adults working PT	-0.285	-0.410	-0.236
	(0.473)	(0.673)	(0.425)
Income Increased	0.050	0.031	0.010
	(0.196)	(0.272)	(0.172)
Income Decreased	-0.404*	-0.596*	-0.385**
	(0.217)	(0.306)	(0.193)
Respondent Works More	-0.199	-0.199	-0.113
	(0.205)	(0.284)	(0.180)
Respondent Works Less	-0.320	-0.474	-0.310
	(0.251)	(0.361)	(0.228)
Spouse Works More	-0.010	-0.078	-0.059
	(0.222)	(0.310)	(0.196)
Spouse Works Less	0.287	0.429	0.272
	(0.237)	(0.328)	(0.207)
Nr. Children (<18 yrs)	-0.075	-0.095	-0.053
	(0.092)	(0.130)	(0.082)
Age Youngest Kid	0.007	0.012	0.008
	(0.024)	(0.034)	(0.021)
Education	0.297***	0.414***	0.254***
	(0.080)	(0.110)	(0.070)
Owns Home (w. Mortgage)	-0.241	-0.066	-0.082
	(0.276)	(0.390)	(0.246)
Rents Home	-0.739**	-1.117**	-0.734**
	(0.363)	(0.545)	(0.344)
Owns Cabin	0.716***	0.975***	0.617***
	(0.234)	(0.315)	(0.201)
R-squared	0.190		

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=275

TABLE 15: Impact of Four Day School Week on Length of Stay in Long Trips.

VARIABLES	(1) Trips x Days	(2) ln(1+trips x days)	(3) Days/trip
Four Day	-0.895	-0.152	0.022
	(0.958)	(0.153)	(0.511)
Nr. Adults	1.185	0.196	0.502
	(1.078)	(0.172)	(0.515)
Pcnt. Adults working FT	-0.657	-0.087	0.704
	(2.244)	(0.357)	(1.071)
Pcnt. Adults working PT	-0.547	-0.160	0.217
	(2.787)	(0.444)	(1.242)
Income Increased	-0.232	-0.128	-0.361
	(1.156)	(0.184)	(0.668)
Income Decreased	-1.017	-0.228	-0.670
	(1.281)	(0.204)	(0.658)
Respondent Works More	-1.363	-0.238	-0.506
	(1.209)	(0.192)	(0.676)
Respondent Works Less	0.864	-0.038	0.043
	(1.479)	(0.235)	(0.752)
Spouse Works More	-0.414	-0.057	-0.128
	(1.308)	(0.208)	(0.717)
Spouse Works Less	-0.584	-0.181	-0.881
	(1.399)	(0.223)	(0.698)
Nr. Children (<18 yrs)	-0.379	-0.069	-0.200
	(0.545)	(0.087)	(0.258)
Age Youngest Kid	0.046	0.027	0.118
	(0.143)	(0.023)	(0.072)
Education	0.905*	0.083	0.048
	(0.470)	(0.075)	(0.245)
Owns Home (w. Mortgage)	0.823	0.453*	1.572*
	(1.628)	(0.259)	(0.816)
Rents Home	-2.314	-0.273	-0.163
	(2.142)	(0.341)	(1.072)
Owns Cabin	2.210	0.465**	1.226*
	(1.379)	(0.219)	(0.737)
R-squared	0.185	0.215	0.168

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=275

TABLE 16: Impact of Four Day Week on Number of Household Members in Long Trips.

VARIABLES	(1) Trips x Members	(2) Members/trip
Four Day	-0.876*	-0.216
	(0.521)	(0.256)
Nr. Adults	1.387**	0.668***
	(0.586)	(0.234)
Pcnt. Adults working FT	-1.617	-0.167
	(1.221)	(0.552)
Pcnt. Adults working PT	-1.463	-0.245
	(1.516)	(0.647)
Income Increased	-0.455	-0.402
	(0.629)	(0.310)
Income Decreased	-0.736	-0.214
	(0.697)	(0.348)
Respondent Works More	-0.746	-0.401
	(0.658)	(0.296)
Respondent Works Less	-0.157	-0.368
	(0.804)	(0.372)
Spouse Works More	-0.596	-0.329
	(0.711)	(0.316)
Spouse Works Less	-0.252	-0.718**
	(0.761)	(0.354)
Nr. Children (<18 yrs)	0.298	0.214
	(0.296)	(0.144)
Age Youngest Kid	0.048	0.071*
	(0.078)	(0.041)
Education	0.538**	0.091
	(0.255)	(0.127)
Owns Home (w. Mortgage)	0.992	1.059***
	(0.885)	(0.401)
Rents Home	-0.677	0.054
	(1.165)	(0.482)
Owns Cabin	1.039	0.559
	(0.750)	(0.388)
R-squared	0.201	0.201

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=275

TABLE 17: Accommodations in Long Trips.

VARIABLES	(1) Trips w Hotel Stay	(2) ln(1+ trips w hotel stay)	(3) Nights in Hotel	(4) ln(1+nights in hotel)
Four Day	-0.273**	-0.139**	-1.459**	-0.275*
	(0.106)	(0.054)	(0.727)	(0.140)
Nr. Adults	0.159	0.076	1.025	0.203
	(0.184)	(0.072)	(1.029)	(0.158)
Pcnt. Adults working FT	-0.316	-0.159	-1.219	-0.288
	(0.217)	(0.113)	(1.696)	(0.279)
Pcnt. Adults working PT	-0.171	-0.097	-0.087	-0.162
	(0.282)	(0.146)	(2.299)	(0.363)
Income Increased	0.027	-0.002	-0.188	-0.082
	(0.140)	(0.071)	(0.971)	(0.181)
Income Decreased	-0.124	-0.081	-0.843	-0.241
	(0.138)	(0.071)	(1.110)	(0.186)
Respondent Works More	-0.153	-0.084	-1.347	-0.261
	(0.134)	(0.070)	(0.921)	(0.180)
Respondent Works Less	0.048	-0.008	0.756	-0.048
	(0.158)	(0.074)	(1.115)	(0.190)
Spouse Works More	-0.046	-0.004	0.099	0.063
	(0.131)	(0.071)	(0.944)	(0.191)
Spouse Works Less	-0.089	-0.075	-1.073	-0.228
	(0.168)	(0.079)	(1.233)	(0.193)
Nr. Children (<18 yrs)	-0.042	-0.018	-0.062	-0.031
	(0.060)	(0.030)	(0.411)	(0.074)
Age Youngest Kid	-0.012	-0.003	-0.027	0.004
	(0.016)	(0.008)	(0.117)	(0.021)
Education	0.124	0.051	0.602	0.105
	(0.083)	(0.036)	(0.548)	(0.083)
Owns Home (w. Mortgage)	0.082	0.090	1.178	0.295
	(0.242)	(0.104)	(1.408)	(0.240)
Rents Home	-0.263	-0.124	-1.227	-0.258
	(0.222)	(0.106)	(1.338)	(0.260)
Owns Cabin	0.188	0.102	1.200	0.238
	(0.188)	(0.094)	(1.161)	(0.228)
R-squared	0.192	0.197	0.196	0.183

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=275

TABLE 18: Expenditures on Long Trips.

VARIABLES	(1) OLS Cost	(2) OLS ln(1+cost)	(3) Censored Cost	(4) Censored ln(1+cost)
Four Day	-375.924	-0.470	-674.517	-0.748
	(334.157)	(0.477)	(677.582)	(1.053)
Nr. Adults	489.997	0.332	887.205	0.792
	(621.477)	(0.511)	(767.267)	(1.199)
Pcnt. Adults working FT	-101.392	-0.010	399.959	0.965
	(700.971)	(0.987)	(1,657.769)	(2.576)
Pcnt. Adults working PT	313.839	-0.122	717.354	0.437
	(854.337)	(1.214)	(2,100.121)	(3.277)
Income Increased	95.996	-0.175	-15.954	-0.457
	(381.117)	(0.591)	(806.732)	(1.255)
Income Decreased	104.906	-0.381	-145.622	-0.908
	(457.452)	(0.639)	(899.293)	(1.403)
Respondent Works More	-701.949*	-0.906	-1,520.698*	-2.010
	(371.241)	(0.581)	(852.898)	(1.324)
Respondent Works Less	-270.824	-0.669	-955.454	-1.855
	(534.778)	(0.711)	(1,102.127)	(1.729)
Spouse Works More	119.065	0.037	139.807	-0.060
	(411.098)	(0.638)	(910.566)	(1.420)
Spouse Works Less	-88.575	-0.741	-577.702	-1.701
	(551.769)	(0.704)	(993.200)	(1.557)
Nr. Children (<18 yrs)	-74.496	-0.244	-308.380	-0.660
	(203.797)	(0.259)	(405.705)	(0.631)
Age Youngest Kid	28.482	0.071	94.681	0.171
	(47.118)	(0.074)	(100.414)	(0.156)
Education	313.327	0.256	521.412	0.517
	(295.784)	(0.255)	(320.363)	(0.500)
Owns Home (w. Mortgage)	-158.285	1.223	658.087	2.884
	(966.097)	(0.850)	(1,157.409)	(1.827)
Rents Home	-915.133	-1.080	-3,286.954*	-4.447
	(839.514)	(0.953)	(1,818.417)	(2.823)
Owns Cabin	1,146.357*	1.661**	2,300.790**	3.333**
	(653.187)	(0.773)	(906.910)	(1.422)
R-squared	0.136	0.196		

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=277

TABLE 19: Numbers of Long Trips in Reported in Minnesota.

% Trips in MN	Freq.	Percent
None	235	80.76
One Third	7	2.05
Half	16	5.5
Two Thirds	6	2.06
All	27	9.28
Total	291	100
Nr Of trips in MN	**Freq.**	**Percent**
0	235	80.76
1	39	13.4
2	15	5.15
3	2	0.69
Total	291	100

TABLE 20: Effect of Four Day School Week on Long Trips in Minnesota.

VARIABLES	(1) Trips	(2) Pcnt Trips	(3) First or Second	(4) Stayed in Hotel
Four Day	-0.199***	-0.095**	-0.152***	-0.110***
	(0.072)	(0.040)	(0.056)	(0.038)
Nr. Adults	0.127	0.062	0.092	0.055
	(0.094)	(0.052)	(0.064)	(0.042)
Pcnt. Adults working FT	-0.080	-0.016	-0.083	-0.123
	(0.182)	(0.091)	(0.137)	(0.089)
Pcnt. Adults working PT	-0.102	-0.049	0.007	-0.123
	(0.217)	(0.111)	(0.170)	(0.109)
Income Increased	-0.033	-0.012	0.037	0.004
	(0.094)	(0.050)	(0.072)	(0.043)
Income Decreased	0.014	0.045	0.002	-0.001
	(0.103)	(0.063)	(0.077)	(0.049)
Respondent Works More	-0.007	-0.021	0.006	-0.006
	(0.095)	(0.050)	(0.073)	(0.044)
Respondent Works Less	-0.052	-0.071	-0.015	-0.045
	(0.097)	(0.063)	(0.088)	(0.047)
Spouse Works More	-0.073	-0.029	-0.086	-0.022
	(0.098)	(0.055)	(0.071)	(0.045)
Spouse Works Less	0.102	0.031	-0.007	-0.036
	(0.126)	(0.066)	(0.081)	(0.043)
Nr. Children (<18 yrs)	0.022	0.008	-0.015	0.019
	(0.044)	(0.022)	(0.034)	(0.021)
Age Youngest Kid	0.004	0.004	0.005	-0.002
	(0.012)	(0.007)	(0.009)	(0.005)
Education	0.039	-0.002	0.014	0.007
	(0.046)	(0.025)	(0.027)	(0.017)
Owns Home (w. Mortgage)	0.041	0.039	0.147*	0.035
	(0.141)	(0.070)	(0.088)	(0.060)
Rents Home	-0.057	-0.014	0.002	-0.066
	(0.156)	(0.086)	(0.147)	(0.052)
Owns Cabin	-0.000	0.034	0.099	0.030
	(0.104)	(0.061)	(0.090)	(0.061)
R-squared	0.094	0.070		

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1, N=275

TABLE 21: Impact of Four-day School Week on Long Trips (Summary of Selected Outcomes).

		Average	Four-day Effect	% change
TOTAL				
	Number of trips	1.33	0.35	27%
	Days in hotel	5.17	1.46	28%
	Money	2303	675	29%
IN MINNESOTA				
	% trips in MN	0.22	0.09	40%
	Trips in MN	0.41	0.20	49%
	Hotels in MN	0.18	0.11	61%

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APPENDIX 1

UNIVERSITY OF MINNESOTA
Driven to Discover℠

Dear Parent!

We are requesting your help with an important study regarding how school schedules affect the vacationing opportunities of families with young children. The study is being conducted by University of Minnesota researchers in collaboration with the University's Tourism Center. We will use the information that we get from this questionnaire to help the Minnesota tourism industry to better plan and manage in order to meet the travel expectations and needs of households with children.

The Minnesota Tourism Industry is a very important contributor to many of our local economies, particularly in our State's non-metropolitan communities. In addition to helping improve the travel experiences of families like yours, a few minutes of your time will also help this important industry continue to employ Minnesotans during these hard economic times.

We have selected a small number of Minnesotans in your community to share their views and, therefore, every questionnaire is important. The enclosed questionnaire should take just 10 to 15 minutes to complete. All the information you provide is completely voluntary, confidential and anonymous.

If you have any questions or concerns about the survey, please feel free to call me at (612) 625-2749 or email me at myker001@umn.edu. Thank you in advance for your participation in this important project!

Sincerely,

Elton Mykerezi,
Asst. Professor, Applied Economics
University of Minnesota, Twin Cities

1 (ACGC)

1. **Please think of "long" vacations or trips that you and your family have taken over the last 2 years: These are trips that you (yourself or accompanied by some or all of your household members) took for leisure and that lasted for 5 days or more. *(please ignore travel that was strictly for business purposes)*.**

   Which of the following statements best represents your experiences?

____I/We have not taken trips that lasted five days or longer in the last 2 years.

____ I/We have taken one long trip in the last 2 years.

____ I/We have taken two long trips in the last 2 years.

____ I/We have taken three or four long trips in the last 2 years.

____ I/We have taken five or more trips in the last 2 years.

2. **Please provide some details on these "long vacations/trips" that you and/or your household members took for leisure. Please start with the most recent trip and go back as many years or trips as you can recall. (*We realize these may be difficult to recall so partial information is also appreciated!*)**

	Month and year in which the trip took place.	Primary Destination: city, state , country or state & name of area/resort/camping site/national park	Was the trip within Minnesota? 1-Yes 2-No	Number of days trip lasted	Number of household members that went with you on the trip	Transportation: 1-own vehicle 2-rental vehicle 3- flight 4-bus 5- other	Primary Accommodation: 1-hotel, motel or B & B 2-Resort 3-Vacation home rental 4-own or someone else's cabin or secondary home 5-stayed with friends/family 6- camping site/RV	Approximate overall cost for the trip for the whole family
1								
2								
3								
4								
5								
6								
7								

3. **Would you please share some information on how your travel experiences in the last 12 months (October 2010-now) were different from the previous year (so relative to October 2009-November 2010)?**

A. Please think of "the long vacations or trips" lasting 5 days or longer over the last 12 months (Since October 2010). How has the number of these long trips changed since one year ago (so relative to the 12 months from October 2009 to November2010)?

___ More ___ Fewer ___ The same

2 (ACGC)

B. Please rate each of the reasons for the change in long trips (if any) by circling your response on a scale from 1 to 5:

	Not at all Important				Extremely Important
Changes in financial circumstances	1	2	3	4	5
Changes in child's school/pre-school/ schedule	1	2	3	4	5
Changes in family size or composition	1	2	3	4	5
Changes in preferences	1	2	3	4	5
Changes in your own or spouses work schedule	1	2	3	4	5
Changes in child's sports or extra-curricular activities schedule	1	2	3	4	5

C. If your child's school/pre-school schedule changed since the 2009-2010 school year in a way that affects your ability to take long trips would you please describe how?_____

_____

D. How has the average expenditure on each of your long trips changed since one year ago?

___ On average more money per trip.

___ On average less money per trip.

___ About the same amount of money per trip.

4. Please think of your "shorter trips or vacations" in the last 12 months (from October 2010 until now). These are trips that required overnight stay away from home but lasted for 4 days or fewer. (For example, trips on regular or long weekends or trips of 4 regular week days or fewer).

A. How many of these "shorter trips/vacations" would you say you have taken in the last 12 months?

____ None ____ One or two ____ Three or four ____ Five or more

B. Please provide some details on some of these "shorter trips" that you and/or your household members took for leisure. Please start with the most recent month or trip and go back as many months or trips as you can recall. (*We realize these may be difficult to recall so partial information is also appreciated!*)

	Month and year in which the trip took place.	Primary Destination: city, state , country or state & name of area/resort/camping site/national park	Was the trip within Minnesota? 1-Yes 2-No	Number of days trip lasted	Number of household members that went with you on the trip	Transportation: 1-own vehicle 2-rental vehicle 3- flight 4-bus 5- other	Primary Accommodation: 1-hotel, motel or B & B 2-Resort 3-Vacation home rental 4-own or someone else's cabin or secondary home 5-stayed with friends/family 6- camping site/RV	Approximate overall cost for the trip for the whole family
1								
2								
3								
4								
5								
6								

C. How has the number of these shorter trips/vacations over the last 12 months changed since one year ago (so relative to the 12 months from October 2009 to November 2010)?

___ More ___ Fewer ___ The same

D. Please rate the reasons for these changes in shorter trips by circling your response on a scale from 1 to 5:

	Not at all Important				Extremely Important
Changes in financial circumstances	1	2	3	4	5
Changes in child's school/pre-school/ schedule	1	2	3	4	5
Changes in family size or composition	1	2	3	4	5
Changes in preferences	1	2	3	4	5
Changes in your own or spouses work schedule	1	2	3	4	5
Changes in child's sports or extra-curricular activities schedule	1	2	3	4	5

E. If your child's school/pre-school schedule changed since the 2009-2010 school year in a way that affects your ability to take these shorter trips would you please describe how?_____
_____

F. How has the average expenditure on each of these shorter trips changed compared to one year ago?

___ On average more money per trip

___ On average less money per trip

___ About the same amount of money per/trip

5. Please think of "Day Trips" that were more than 50 miles away from home but that did not require overnight stay away from home in the last 12 months (since October 2010).

A. Which of the following statements best describes the number of "day trips" in the last 12 months?

_____ I/We did not take any day trips in the last 12 months.

_____ I/We took one or two such day trips over the last 12 months.

_____ I/We took day trips about every quarter so we took three or four such trips over the last 12 months.

_____ I/We took day trips every other month so we took five or six such trips over the last 12 months.

_____ I/We took day trips almost every month so we took between seven and twelve such trips in the last 12 months.

_____ I/We take several day trips each month so we took more than twelve such trips in the last 12 months.

B. How has the number of these day trips changed since one year ago (so relative to the 12 months from October 2009 to November 2010)?

___ More ___ Fewer ___ The same

C. Please rate each of the reasons for the change in day trips by circling your response on a scale from 1 to 5:

	Not at all Important				Extremely Important
Changes in financial circumstances	1	2	3	4	5
Changes in child's school/pre-school/ schedule	1	2	3	4	5
Changes in family size or composition	1	2	3	4	5
Changes in preferences	1	2	3	4	5
Changes in your own or spouses work schedule	1	2	3	4	5
Changes in child's sports or extra-curricular activities schedule	1	2	3	4	5

D. If child's school/pre-school schedule changed since the 2009-2010 school year in a way that affects your ability to take day trips would you please describe how?_____

---

6. Would you please provide some information on your general leisure activities?

A. On an average month during the school year (September-May) how many times do you?

_____ Go to the movies
_____ Go to the theater
_____ Attend concerts
_____ Attend sporting events
_____ Go on tours or visit museums
_____ Dine out with family or friends
_____ Cook at home for whole family
_____ Have a family meal that you order in

Other Frequent Activities (Please describe)

1. _____ 2._____

B. On a typical month during the season that is appropriate for these activities, how many times are you involved in the following:

_____ Golf
_____ Fishing
_____ Tennis
_____ Four-wheeling/biking/other off road activities
_____ Skiing/snowboarding
_____ Exercise classes
_____ Scuba/snorkeling/ or other water activities
_____ Hunting

Other Frequent Activities (Please describe)

1. _____ 2._____

7. Would you please provide some information on daycare use and expenditures?

A. During the school year:

On average, how many days per week do you pay for service in your own home? _____

What is the average daily cost for service in your own home? $_____

On average, how many days per week do you pay for service away from your own home (e.g. daycare center)? _____

What is the average daily cost for service away from your own home? $_____

B. When school is out (Summer vacation):

On average, how many days per week do you pay for service in your own home? _____

What is the average daily cost for service in your own home? $_____

On average, how many days per week do you pay for service away from your own home (e.g. daycare center)? _____

What is the average daily cost for service away from your own home? $_____

8. Would you please provide some information on the work schedule for the adults living in your home?

A. How many adults (18 years of age or older) reside in your household? _____

B. How many of the adults in your home typically work full time (30 hours per week or more)? _____

C. How many of the adults in your home typically work part time (29 hours per week or less)? _____

For adult 1 (respondent).

D. Please state the occupation for the job that you consider your "primary job" *(please think of the most recent job if you are currently not working)*_____

_____ On a typical week how many days could you work from your home if you chose to do so?

_____ How many days paid vacation do you get per year?

_____ How many days of unpaid vacation do you get per year?

_____ How many personal/sick days do you get per year?

For adult 2 (spouse/significant other).

E. Please state the occupation for the job that this household member considers their "primary job" *(please think of the most recent job if they are currently not working)*_____

On a typical week how many days could this person work from your home if they chose to do so? _____

How many days paid vacation does the person get per year? _____

How many days of unpaid vacation does the person get per year? _____

How many personal/sick days does the person get per year? _____

9. Please tell us how your income and employment has changed since one year ago

A. Relative to one year ago are you and your family financially:

Better off___ Worse off___ About the same___

B. Relative to one year ago are you working

More hours/week___ Fewer hours/week___ About the same number of hours/week____

C. Relative to one year ago is your spouse working

More hours/week___ Fewer hours/week___ About the same number of hours/week____

9. About you and your family:

A. How many children (ages 17 or younger) reside in your household? _____

B. Please indicate the month and year of birth for each child:

Child 1___/_____, Child 2___/_____, Child 3___/_____, Child 4___/_____, Child 5___/_____

C. What is the highest degree that you have completed?

___ High School

___ Associate Degree (*includes community colleges, junior colleges, technical colleges & trade schools*)

___ Bachelors

___ Graduate degree (MS, MA, Mph, PhD, MD, D.Ed., JD, or equivalent degree requiring post baccalaureate work)

___ None or other (If other) Please Describe_____

10. Housing arrangements:

A. Which of the following best describes your living arrangements?

_____ Own my home, fully paid _____ Own my home, paying mortgage

_____ Renting _____ Other

B. Do you own a secondary/vacation cabin or home? ___ Yes ___ No

11. Your child's school schedule:

A. Last year, your school district switched from a regular school week to a 4 day school week. Has this switch affected how you spend your free time at all?

___ Yes ___ No

B. If you answered (Yes) to the above question, how have the following activities changed due to the four-day week?

	Increased	No Change	Decreased
Long trips (5 or more days)	1	2	3
Shorter trips (Between 2 and 4 days)	1	2	3
Day trips (that require no overnight stay away from home)	1	2	3
Ability to pursue personal activities (e.g. Exercise, golf, etc.)	1	2	3
Frequency of family meals away from home (e.g. in a restaurant)	1	2	3
Frequency of other routine family activities away from home (e.g. Movies, Theater, sporting events, etc.)	1	2	3

C. In your own words how would you say the switch to a four day school week has affected how you spend your own free time and/or your family leisure time?_____
_____
_____
_____

D. With all things considered, overall, how satisfied are you with the 4-day school week?

Very Unsatisfied				Very Satisfied
1	2	3	4	5

Would you please tell us Why?_____
_____